

Takema Fukatsu, Ph.D

Group Leader

Symbiotic Evolution and Biological Functions Research Group

Bioproduction Research Institute

National Institute of Advanced Industrial Science and Technology (AIST)

Education

- 1989 B.Sc. Department of Zoology, University of Tokyo, Japan
- 1991 M.Sc. Department of Zoology, University of Tokyo, Japan
- 1994 Ph.D. Department of Zoology, University of Tokyo, Japan

Career History

- 1995-1998 Researcher, National Institute of Bioscience and Human-Technology (NIBH), Japan
- 1998-2001 Appointed Researcher, National Institute of Bioscience and Human-Technology (NIBH), Japan
- 2001-2004 Senior Research Scientist, National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 2004-present Group Leader, National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 2003-present Associate Professor, Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan
- 2005-2010 Professor, Department of General Systems Studies, University of Tokyo, Japan
- 2008 Invited Professor, University Louis Pasteur, Strasbourg, France

Expertise

Evolutionary Biology; Microbiology; Entomology

Editorship in Scientific Journals

- 2007-present Associate Editor, Proceedings of the Royal Society B: Biological Sciences
- 2007-present Associate Editor, Journal of Experimental Zoology Part A
- 2007-present Reviewing Editor, Zoological Science
- 2007-present Editorial Board Member, The Open Evolution Journal
- 2005-2009 Editor-in-Chief, Newsletter of the Society of Evolutionary Studies, Japan
- 2004-2005 Editorial Board Member, Entomological Science
- 2003-2006 Editorial Board Member, Applied Entomology and Zoology

Responsibility in Scientific Communities

- 2006-present Councilor, The International Symbiosis Society
- 2006-present Councilor, The Society of Evolutionary Studies, Japan
- 2009-present Councilor, The Japanese Society of Applied Entomology and Zoology

Membership of Scientific Communities

- The International Symbiosis Society
- The Society of Evolutionary Studies, Japan
- The Zoological Society of Japan
- The Japanese Society of Applied Entomology and Zoology
- The Japan Society of Medical Entomology and Zoology
- The Society of Genome Microbiology, Japan
- The Japanese Drosophila Research Conference
- The Japanese Society for Cordyceps Research

Awards

- 2011 The Japanese Society of Applied Entomology and Zoology Prize, the Japanese Society of Applied Entomology and Zoology
- 2010 The Zoological Society of Japan Prize, the Zoological Society of Japan
- 2008 AIST President Award, National Institute of Advanced Industrial Science and Technology (AIST)
- 2007 JSPS Prize, Japan Society for the Promotion of Science
- 2004 Young Scientist Prize, the Zoological Society of Japan
- 2002 Young Scientist Prize, the Society of Evolutionary Studies, Japan
- 1995 The Zoological Science Award, the Zoological Society of Japan

Selected Publications

Tsuchida T., Koga R., Horikawa M., Tsunoda T., Maoka T., Matsumoto S., Simon J.-C., Fukatsu T. (2010) Symbiotic bacterium modifies aphid body color. *Science* 303: 1102-1104.

Uematsu K., Kutsukake M., Fukatsu T., Shimada M., Shibao H. (2010) Altruistic colony defense by menopausal female insects. *Curr. Biol.* 20: 1182-1186.

Fukatsu T. (2010) A fungal past to insect color. *Science* 328: 574-575.

Hosokawa T., Koga R., Kikuchi Y., Meng X.-Y., Fukatsu T. (2010) *Wolbachia* as a bacteriocyte-associated nutritional mutualist. *Proc. Natl. Acad. Sci. USA* 107: 769-774.

The International Aphid Genomics Consortium (2010) Genome sequence of the pea aphid *Acyrtosiphon pisum*. *PLoS Biol.* 8: e1000313.

Kutsukake M., Shibao H., Uematsu K., Fukatsu T. (2009) Scab formation and wound healing of plant tissue by soldier aphid. *Proc. R. Soc. B* 276: 1555-1563.

Nikoh N., Tanaka K., Shibata F., Kondo N., Hizume M., Shimada M., Fukatsu T. (2008) *Wolbachia* genome integrated in an insect chromosome: evolution and fate of laterally transferred endosymbiont genes. *Genome Res.* 18: 272-280.

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- Hosokawa T., Kikuchi Y., Shimada M., Fukatsu T. (2007) Obligate symbiont involved in pest status of host insect. *Proc. R. Soc. B* 274: 1979-1984.
- Hosokawa T., Kikuchi Y., Nikoh, N., Shimada, M., Fukatsu T. (2006) Strict host-symbiont speciation and reductive genome evolution in insect gut bacteria. *PLoS Biol.* 4: e337.
- Nakabachi A., Shigenobu S., Sakazume N., Shiraki T., Hayashizaki Y., Carninci P., Ishikawa H., Kudo T., Fukatsu T. (2005) Transcriptome analysis of the aphid bacteriocyte, the symbiotic host cell that harbors an endocellular mutualistic bacterium, *Buchnera*. *Proc. Natl. Acad. Sci. USA* 102: 5477-5482.
- Tsuchida T., Koga R., Fukatsu T. (2004) Host plant specialization governed by facultative symbiont. *Science* 303: 1989-1989.
- Kutsukake M., Shibao H., Nikoh N., Morioka M., Tamura T., Hoshino T., Ohgiya S., Fukatsu T. (2004) Venomous protease of aphid soldier for colony defense. *Proc. Natl. Acad. Sci. USA* 101: 11338-11343.
- Koga R., Tsuchida T., Fukatsu T. (2003) Changing partners in an obligate symbiosis: a facultative endosymbiont can compensate for loss of the essential endosymbiont *Buchnera* in an aphid. *Proc. R. Soc. Lond. B* 270: 2543-2550.
- Kondo N., Nikoh N., Ijichi N., Shimada M., Fukatsu T. (2002) Genome fragment of *Wolbachia* endosymbiont transferred to X chromosome of host insect. *Proc. Natl. Acad. Sci. USA* 99: 14280-14285.